Markov Processes: From Abstract Theory to Financial Applications

Lowie Rombouts

(Universiteit Antwerpen)

Markov processes provide a natural framework for modeling memoryless stochastic systems and are widely applied in financial mathematics. Beyond their practical relevance, they possess an elegant theoretical foundation, including concepts such as Feller semigroups and generators. We will cover key ideas, theorems, and illustrative examples from the theory of Markov processes. To conclude, we will connect these abstract concepts to finance, demonstrating how theory can be used in practice.